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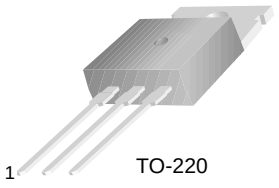
FAIRCHILD SEMICONDUCTOR™

Jameco Part Number 179389

TIP42 SERIES(TIP42/42A/42B/42C)

Medium Power Linear Switching Applications

- Complement to TIP41/41A/41B/41C



TO-220

1.Base 2.Collector 3.Emitter

PNP Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage : TIP42	- 40	V
	: TIP42A	- 60	V
	: TIP42B	- 80	V
	: TIP42C	- 100	V
V_{CEO}	Collector-Emitter Voltage : TIP42	- 40	V
	: TIP42A	- 60	V
	: TIP42B	- 80	V
	: TIP42C	- 100	V
V_{EBO}	Emitter-Base Voltage	- 5	V
I_C	Collector Current (DC)	- 6	A
I_{CP}	Collector Current (Pulse)	-10	A
I_B	Base Current	-2	A
P_C	Collector Dissipation (T_C=25°C)	65	W
P_C	Collector Dissipation (T_a=25°C)	2	W
T_J	Junction Temperature	150	°C
T_{STG}	Storage Temperature	- 65 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
V_{CEO}(sus)	* Collector-Emitter Sustaining Voltage				
	: TIP42	I_C = -30mA, I_B = 0	-40		V
	: TIP42A		-60		V
	: TIP42B		-80		V
	: TIP42C		-100		V
I_{CEO}	Collector Cut-off Current				
	: TIP42/42A	V_{CE} = -30V, I_B = 0		-0.7	mA
	: TIP42B/42C	V_{CE} = -60V, I_B = 0		-0.7	mA
I_{CES}	Collector Cut-off Current				
	: TIP42	V_{CE} = -40V, V_{EB} = 0		-400	μA
	: TIP42A	V_{CE} = -60V, V_{EB} = 0		-400	μA
	: TIP42B	V_{CE} = -80V, V_{EB} = 0		-400	μA
	: TIP42C	V_{CE} = -100V, V_{EB} = 0		-400	μA
I_{EBO}	Emitter Cut-off Current	V_{EB} = -5V, I_C = 0		-1	mA
h_{FE}	* DC Current Gain	V_{CE} = -4V, I_C = -0.3A	30		
		V_{CE} = -4V, I_C = -3A	15	75	
V_{CE}(sat)	* Collector-Emitter Saturation Voltage	I_C = -6A, I_B = -600mA		-1.5	V
V_{BE}(sat)	* Base-Emitter Saturation Voltage	V_{CE} = -4V, I_C = -6A		-2.0	V
f_T	Current Gain Bandwidth Product	V_{CE} = -10V, I_C = -500mA	3.0		MHz

* Pulse Test: PW≤300μs, Duty Cycle≤2%

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Typical Characteristics

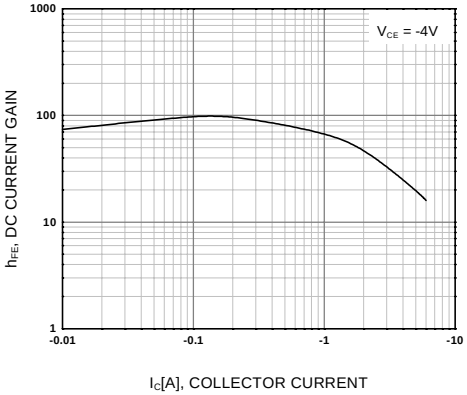

Figure 1. DC current Gain

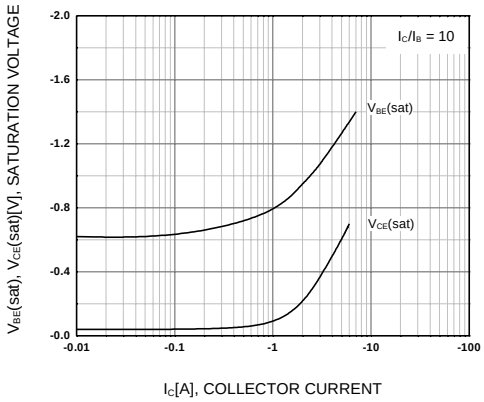

Figure 2. Base-Emitter Saturation Voltage Collector-Emitter Saturation Voltage

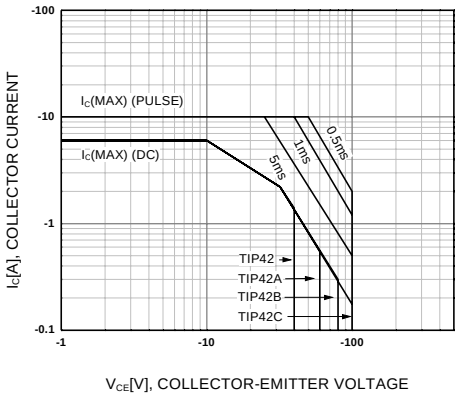

Figure 3. Safe Operating Area

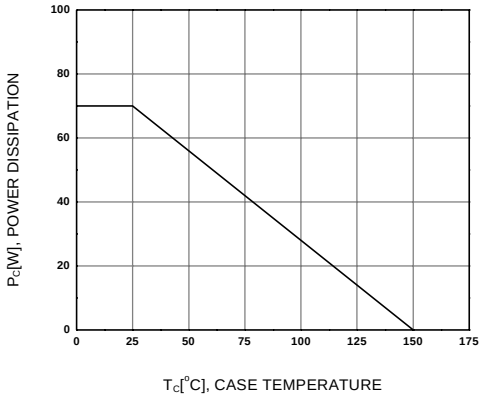

Figure 4. Power derating

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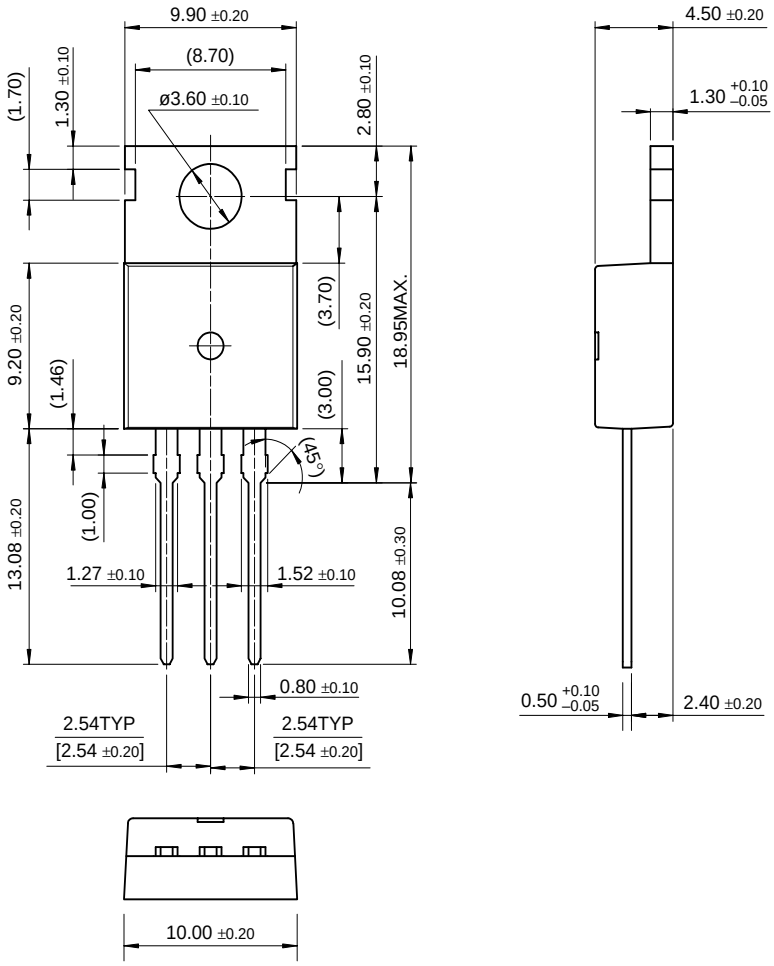
Package Demensions

TO-220



Dimensions in Millimeters

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